New Jersey
Department of Transportation
1035 Parkway Avenue • CN 600 • Trenton, New Jersey 08625-0600
**Christine Todd Whitman,** Governor
**Frank J. Wilson,** Commissioner

Soil Erosion and Sediment Control Revisions

93027 ADU

June 13, 1994

MEMORANDUM
All Design Units

Subject: Revision to the 1989 Standard Specifications, Section 111, and Construction Detail CD-51

Reference: Memorandum to All Design Units entitled "Soil Erosion and Sediment Control", 91059 ADU, dated March 15, 1993

The current specifications for Soil Erosion and Sediment Control, issued by the above referenced Memorandum, and Construction Detail CD-51 have been revised to include two additional means to minimize sedimentation at inlet drainage structures. One of these temporary control measures consists of a revision to the inlet filter detail (CD-51.7) to provide a treatment for existing inlets within pavement areas in which the geotextile is placed under the grate (the current treatment would be utilized for new inlets). The other control measure added consists of placing haybales around the inlet structure. This haybale barrier can be utilized for existing inlets within grass or pavement areas as provided by the detail and the specification (Inlet Protection, Haybale Barrier, CD-51.8).

The following are the specification changes which shall be incorporated into the projects' Supplementary Specifications as required:

1. Insert the following after line 3129 of SI89 ROAD7 for projects which include Inlet Filters:

```
0X        INLET FILTERS, CONSISTING OF WELDED WIRE MESH AND GEOTEX-
0X    TILE FABRIC, SHALL BE INSTALLED TO CONTROL SEDIMENTATION AT NEW
 X    INLET DRAINAGE STRUCTURES.  INLET FILTERS OF GEOTEXTILE FABRIC
0X    ALONE SHALL BE INSTALLED TO CONTROL SEDIMENTATION AT EXISTING
 X    INLET DRAINAGE STRUCTURES.
 X
0X        FOR NEW INLET STRUCTURES, WELDED STEEL WIRE MESH SHALL BE
0X    MOLDED AROUND THE INLET FRAMES AND GRATES, OR INLET STRUCTURES,
 X    AND EXTEND A MINIMUM OF 6 INCHES DOWN EACH SIDE OF THE NEW
 X    STRUCTURES.  GEOTEXTILE FABRIC SHALL THEN BE SECURED TO THE
0X    WELDED WIRE MESH.  COARSE AGGREGATE SIZE NO. 8 SHALL BE PLACED
 X    AGAINST THE INLET STRUCTURES TO HOLD THE INLET FILTER IN PLACE.
 X
```

```
0X        FOR EXISTING INLET STRUCTURES, GEOTEXTILE FABRIC SHALL BE
0X    PLACED UNDER THE GRATES, OVER THE CURB PIECES AND EXTEND A MINI-
 X    MUM OF 6 INCHES BEYOND.  COARSE AGGREGATE SIZE NO. 8 SHALL BE
0X    PLACED BEHIND EACH CURB PIECE AND ON THE GEOTEXTILE FABRIC TO
 X    SECURE THE FABRIC IN PLACE.
 X
0X        OPENINGS REQUIRED IN NEW INLET WALLS TO PROVIDE FOR TEMPO-
0X    RARY DRAINAGE SHALL BE COVERED WITH WELDED WIRE MESH, GEOTEXTILE
 X    FABRIC AND COARSE AGGREGATE SIZE NO. 8.
 X
```

In conjunction with this, lines 3130 through 3144, inclusive, shall be deleted.

2. Insert the following after line 3147 of SI89 ROAD7 for projects which include Inlet Protection, Haybale Barrier:

```
OX        INLET PROTECTION, HAYBALE BARRIER.
 X        ---------------------------------
0X        INLET PROTECTION, HAYBALE BARRIER SHALL CONSIST OF HAYBALES
0X    WHICH COMPLETELY ENCIRCLE INLET DRAINAGE STRUCTURES.  THE PERI-
 X    METER LENGTH OF THE HAYBALE BARRIER SHALL BE AT LEAST 4 TIMES
0X    THE PERIMETER LENGTH OF THE INLET STRUCTURE.  HAYBALES SHALL NOT
 X    ENCROACH INTO THE TRAVELED WAY.
 X
0X        HAYBALES PLACED AROUND INLET STRUCTURES WITHIN EARTHEN
0X    AREAS SHALL BE EMBEDDED 4 INCHES INTO THE GROUND AND ANCHORED
 X    IN PLACE WITH 2 WOOD STAKES PER BALE.  HAYBALES PLACED AROUND
 X    INLET STRUCTURES WITHIN PAVEMENT AREAS SHALL ONLY BE PLACED ON
0X    TOP OF THE PAVEMENT AND TIED TOGETHER TO PREVENT MOVEMENT.  HAY-
 X    BALES PLACED ON PAVEMENT AREAS SHALL NOT BE ANCHORED IN PLACE.
 X
```

3. Change line 3152 of SI89 ROAD7 as follows for projects which include Inlet Sediment Traps:

```
 X    EXISTING AND NEW INLET DRAINAGE STRUCTURES.
```

4. Change line 3187 of SI89 ROAD7 as follows for projects which include Temporary Stone Outlet Sediment Traps:

```
 X    EXISTING, NEW, AND TEMPORARY DITCHES.
```

5. Insert the following after line 3290 of SI89 ROAD7 as necessary:

```
0X        INLET FILTERS WILL BE MEASURED BY THE NUMBER OF EACH.
 X
0X        INLET PROTECTION, HAYBALE BARRIERS WILL BE MEASURED BY THE
0X    UNIT.  A UNIT SHALL CONSIST OF THE TOTAL NUMBER OF HAYBALES NECES-
 X    SARY TO ENCIRCLE THE INLET STRUCTURE.
 X
```

X INLET SEDIMENT TRAPS WILL BE MEASURED BY THE NUMBER OF EACH.
X

In conjunction with this, lines 3291 through 3293, inclusive, shall be deleted.

6. Insert the following after line 3321 of SI89 ROAD7 for projects which include any soil erosion and sediment control items:

OX HAYBALES REQUIRED AS DIRECTED AND FOR MAINTENANCE REPLACE-
OX MENT OF BALES FOR THE VARIOUS SOIL EROSION AND SEDIMENT CONTROLS
X WILL BE MEASURED BY THE NUMBER OF EACH.
X

In conjunction with this, lines 3322 through 3325, inclusive, shall be deleted.

7. Insert the following after line 3339 of SI89 ROAD7 for projects which include Inlet Protection, Haybale Barrier:

X INLET PROTECTION, HAYBALE BARRIER UNIT

In conjunction with the above changes, a reduced copy of the revisions to Construction Detail CD-51 is attached.

In addition, as a result of the implementation of the soil erosion and sediment control provisions, it has been determined that a quantity of haybales is needed to be provided on projects as an "if and where directed" quantity for use to supplement other project specified temporary soil erosion and sediment control measures as necessary during construction. Therefore, a minimum of 25 haybales shall be provided on all projects which include soil erosion and sediment control items. This quantity is in addition to any haybales needed for maintenance replacement. Attached is a revised "Instruction to Designers" which specifies this requirement and which supersedes the one contained in the March 15, 1993 ADU.

RECOMMENDED BY:

Robert K. Suess
Chief, Bureau of Roadway
Plans and Specifications

APPROVED BY:

Charles Takacs
Director of Roadway Design
(Chief Engineer of Roadway Design)

Attachments

Implementation Code C

CT:RKS:FC:ab

93027 ADU

Instruction to Designers (REVISED)

The following guidelines should be used to determine quantities for the maintenance of the various soil erosion and sediment controls:

Silt Fence - (quantity to be added to the quantity for the pay item Silt Fence)

40% of the total length of Silt Fence being placed along toes of fill - for maintenance replacement and stockpiling of soil.
10 L.F. for each Inlet Sediment Trap.

Silt Fence, Heavy Duty -

20% of the total length of Silt Fence, Heavy Duty

Construction Driveway - (quantity to be added to the quantity for the pay item Construction Driveway)

An amount equal to the quantity for Construction Driveway for top dressing as required.

Haybales -

25 units to supplement other project specified temporary soil erosion and sediment control measures.
15 units minimum when the pay items Haybale Check Dams with Temporary Stone Outlets or Temporary Slope Drains or Inlet Protection, Haybale Barriers are included in the project.

Temporary Riprap -

0.33 C.Y. for each location of a Haybale Check Dam with Temporary Stone Outlet
0.50 C.Y. for each location of a Temporary Stone Check Dam
0.33 C.Y. for each location of a Temporary Slope Drain
0.50 C.Y. for each Temporary Stone Outlet Sediment Trap

Coarse Aggregate Size No. 2 -

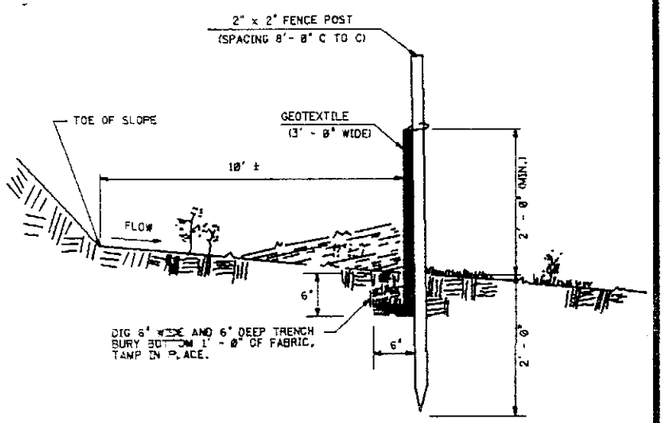
0.2 C.Y. for each location of a Haybale Check Dam with Temporary Stone Outlet
0.2 C.Y. for each location of a Temporary Stone Check Dam
0.2 C.Y. for each Temporary Stone Outlet Sediment Trap
0.5 C.Y. for each Inlet Sediment Trap

Coarse Aggregate Size No. 8 -

0.2 C.Y. for each Inlet Filter

Roadway Excavation, Temporary Erosion Control -
(Clean-out quantity to be added to the quantity for the pay item Roadway Excavation, Temporary Erosion Control)

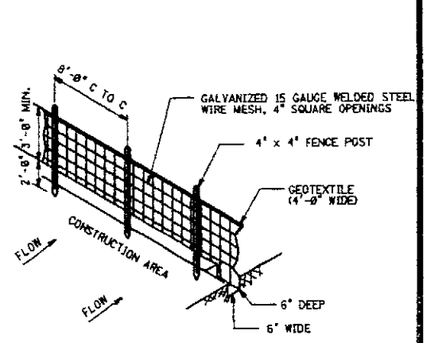
10 C.Y. per 100 L.F. of Silt Fence and/or Silt Fence, Heavy Duty per year. (does not include amount for maintenance replacement and for stockpiles)
10 C.Y. per year for each location of a Haybale Check Dam with Temporary Stone Outlet.
10 C.Y. per year for each location of a Temporary Stone Check Dam
10 C.Y. per year for each Inlet Sediment Trap
5 clean-outs per year for each Temporary Stone Outlet Sediment Trap (5 x initial volume x 50% / year)
1 clean-out per year for each Dewatering Basin (1 x initial volume x 50% / year)




## SILT FENCE

N.T.S.

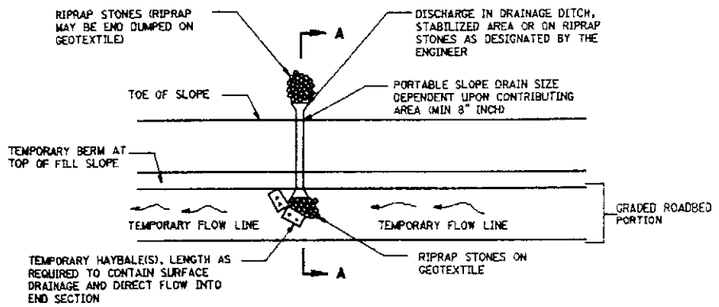
CD - 51.1



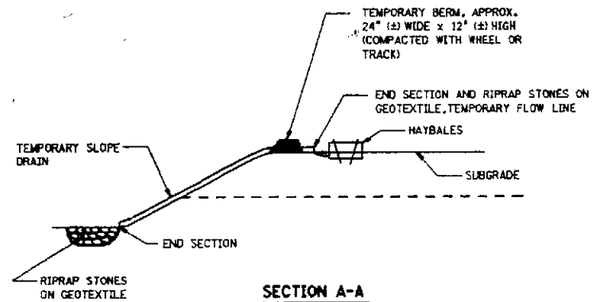

## SILT FENCE, HEAVY DUTY

N.T.S.

CD - 51.2




PLAN



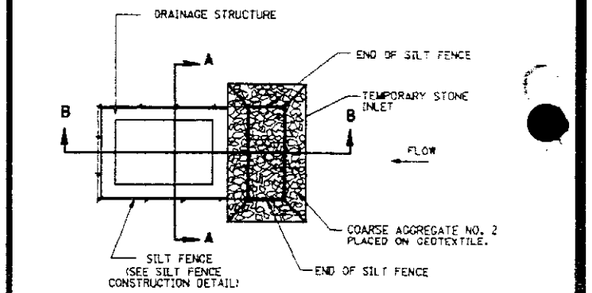

SECTION A-A

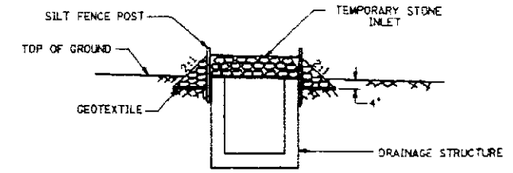
(FOR FILL SLOPE)

## TEMPORARY SLOPE DRAIN

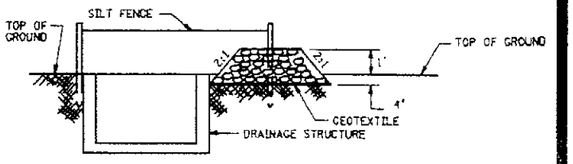
N.T.S.

CD - 51.3




SECTION A-A

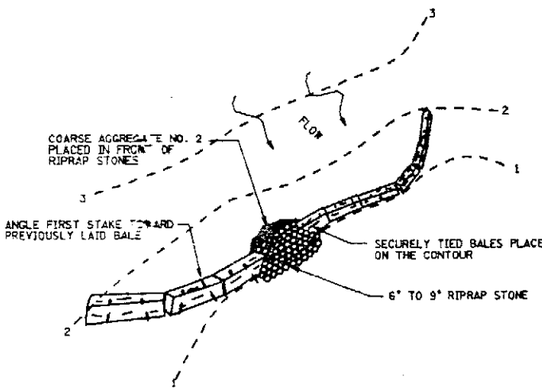



SECTION B-B

## INLET SEDIMENT TRAP

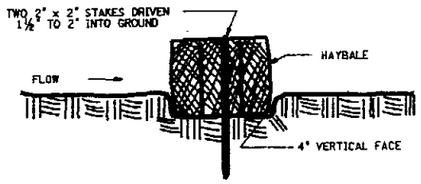
N.T.S.

CD - 51.4



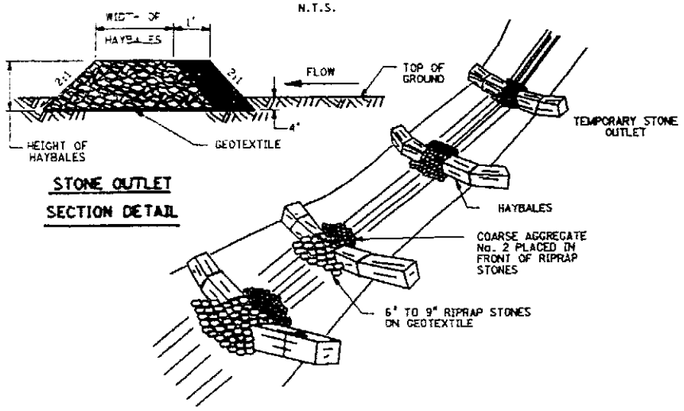

PLACEMENT AND ANCHORING DETAIL

N.T.S.




EMBEDDING DETAIL

N.T.S.

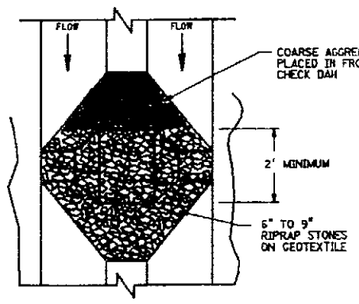



STONE OUTLET
SECTION DETAIL

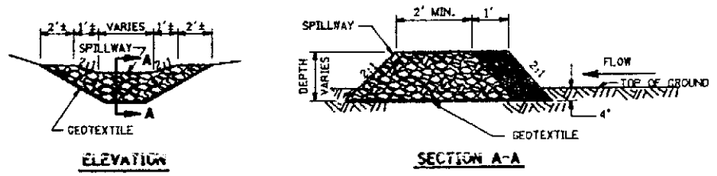
## HAYBALE CHECK DAM WITH TEMPORARY STONE OUTLET

N.T.S.

CD - 51.5




PLAN



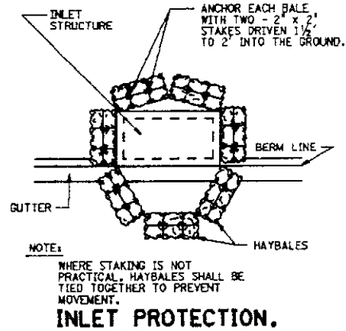

ELEVATION

SECTION A-A

## TEMPORARY STONE CHECK DAM

N.T.S.

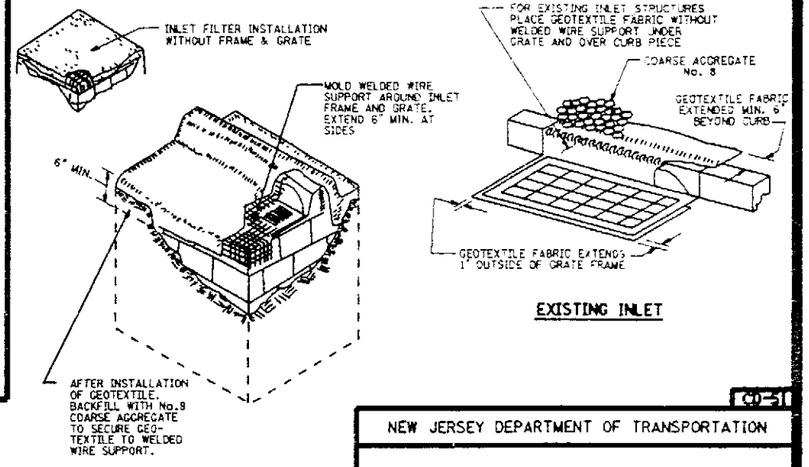
CD - 51.6




## INLET PROTECTION.
## HAYBALE BARRIER

N.T.S.

CD - 51.8




NEW CONSTRUCTION

EXISTING INLET

## INLET FILTER

N.T.S.

CD - 51.7

CD-51

NEW JERSEY DEPARTMENT OF TRANSPORTATION

# CONSTRUCTION DETAILS

N.J.

REVISED CD51.7 AND CD51.8
SHEET CHANGED
TO FEDERAL BLOCK
ADDITIONAL SHEET
ADDITIONAL SHEET
ADDITIONAL SHEET